

1 ABSTRACT

2 A system designed to detect and identify fixed utility objects, such as telephone pedestals,
3 power transformers, man-holes, anchor cables, and the like, that are hidden by heavy
4 overgrowth of vegetation. The system provides for automatic look-ahead detection of
5 such objects during mowing and clearing operations with heavy machinery using passive
6 radio frequency transponder technology to both detect the immediate presence of a tagged
7 object as well as basic identification of the type of object replying to the interrogation.
8 The operator can be signaled audibly and/or visually when a tagged object is detected.
9 The transmitter and antennae are mounted in the cab of a mobile machine for protection
10 from physical damage. An integrated microprocessor performs the requisite algorithms
11 needed to process the reply from one or more RFID (Radio Frequency Identification) tags
12 and generate the alert signals for the operator alerts. Once the object has been located it
13 can be marked and cleared safely by hand thereby preventing severe damage to the tagged
14 equipment. Handheld RFID programmers are used to load or record important
15 identification and maintenance data in the attached tag for maintenance tracking, latitude-
16 longitude location, asset management, placement of other related underground devices or
17 cables, etc. The transmitter unit and display devices can be powered directly from the
18 machine's system power.